

## NEUTRON- AND PROTON-INDUCED NUCLEAR DATA EVALUATION OF MINOR ACTINIDES FOR ENERGIES UP TO 250 MeV

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Within the frame work of the JENDL high energy library, the evaluation of neutron- and proton nuclear data for thorium-232, U-233,234,236, and Cm-243,244,245,246 isotopes have been performed at energies up to 250 MeV. Neutron data was evaluated at energies from 20 MeV to 250 MeV, and combined with the JENDL-3.3 data at 20 MeV, while proton data was obtained for energies from 1 to 250 MeV.

Nuclear model parameters are largely based on the IAEA-RIPL recommendation, and adjusted to better reproduce the available measurements. Special attention was paid on the neutron fission cross sections to achieve continuity and consistency with the existing JENDL-3.3 evaluation using theoretical model, experimental fission barriers, and appropriate fittings. The coupled channel optical model was applied to calculate the total, reaction, elastic, and direct inelastic cross sections, and to obtain the transmission coefficients. Decay of excited nuclei was described with the Hauser-Feshbach and exciton models using the GNASH code to simultaneously handle neutron, proton, deuteron, triton, helium-3, alpha, gamma emissions and fissions. Primary pre-equilibrium emission spectra of helium-3 and alpha-particles were calculated with the coalescence pick-up model using the ALICE/ASH code, and fed into the GNASH calculation. Particles and gamma emission spectra after fission were calculated based on the the statistical approach of Fong, and adjusted to the experimental data using the ALICE-ASH code.